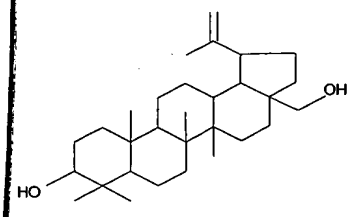
wherein R is alkyl,

said method comprising:

alkylating a dialcohol having the formula:



with a nitrile having the formula:

R-C≡N

under conditions effective to form the diether, and

isolating the diether.

(Amended) A method of preparing betulonic aldehyde comprising:

oxidizing betulinol with chromium anhydride in acetone in the presence of sulfuric acid under conditions effective to produce betulonic aldehyde, and

isolating the betulonic aldehyde.

10. (Amended) A method according to claim 7, wherein said oxidizing further comprises:

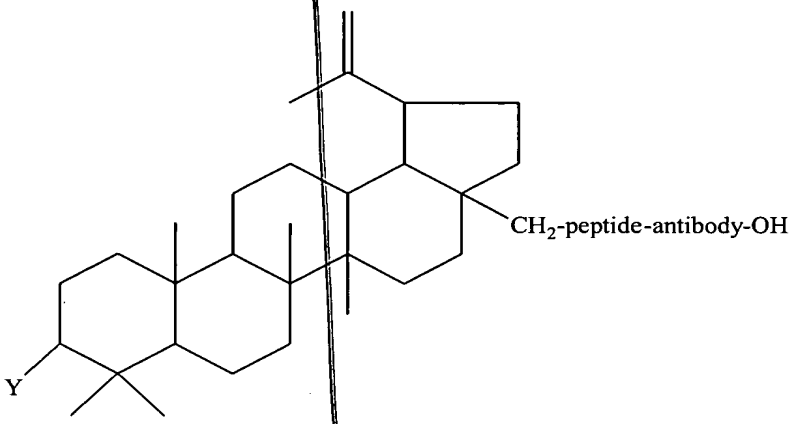
cooling the reaction mixture; and

adding water to the reaction mixture, whereby a sediment containing betulonic aldehyde forms.

14. (Twice-Amended) A compound according to claim 13, wherein the pentapeptide is -Gly-Ala-Leu-Gly-Leu- (SEQ ID NO: 2).

16. (Twice-Amended) A compound according to claim 15, wherein the tetrapeptide is -Leu-Ala-Leu-Ala- (SEQ ID NO: 1).

17. (Amended) A method of producing a betulinol-antibody conjugate having the formula:

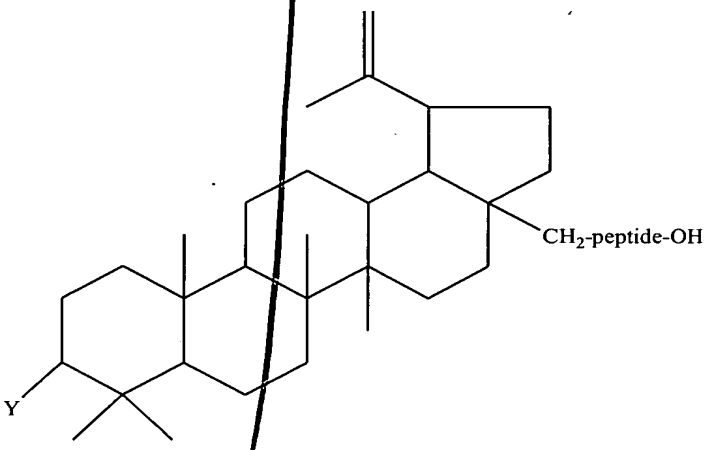


wherein

Y is a hydroxy group, an alkoxy group, or an alkanoyloxy group,

said method comprising:

reacting a betulinol peptide having the formula:



with an antibody having the formula H-antibody-OH under conditions effective to produce the betulinol-antibody conjugate, and

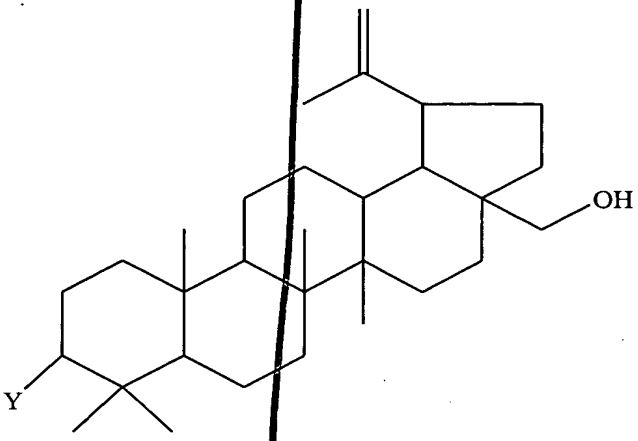
isolating the betulinol-antibody conjugate.

19. (Twice-Amended) A method according to claim 18, wherein the pentapeptide is -Gly-Ala-Leu-Gly-Leu- (SEQ ID NO: 2).

21. (Twice-Amended) A method according to claim 20, wherein the tetrapeptide is -Leu-Ala-Leu-Ala- (SEQ ID NO: 1).

22. (Amended) A method according to claim 17, wherein said betulinol peptide is obtained by a process comprising:

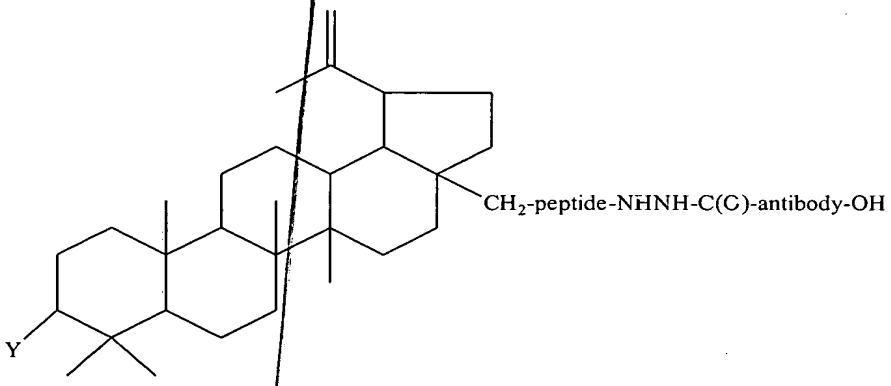
reacting a compound having the formula:



with a peptide having the formula H-peptide-OH under conditions effective to produce the betulinol peptide, and

isolating the betulinol peptide.

23. (Amended) A method of producing a betulinol-antibody conjugate having the formula:

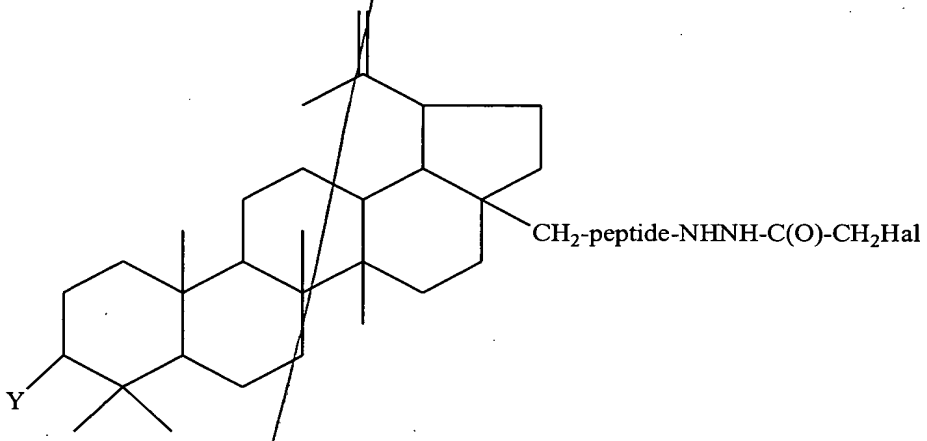


wherein

Y is a hydroxy group, an alkoxy group, or an alkanoyloxy group,

said method comprising:

reacting a haloacetylhydrazide having the formula:



wherein

Hal is a halogen

with an antibody having the formula H-antibody-OH under conditions effective to produce the betulinol-antibody conjugate, and

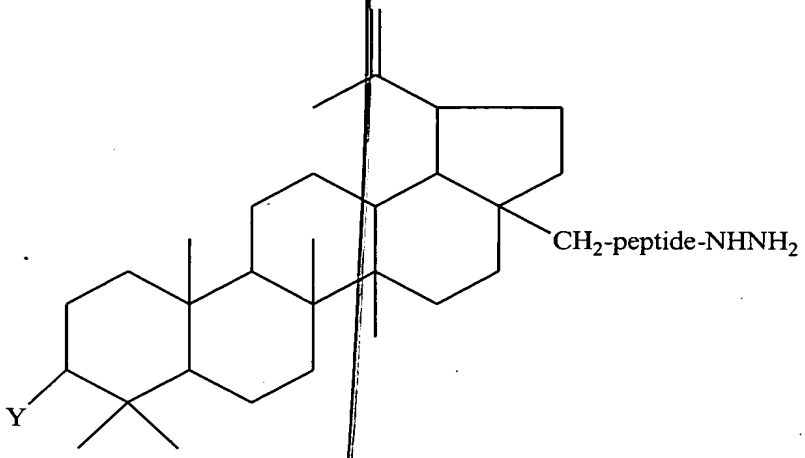
isolating the betulinol-antibody conjugate.

26. (Twice-Amended) A method according to claim 25, wherein the pentapeptide is -Gly-Ala-Leu-Gly-Leu- (SEQ ID NO: 2).

28. (Twice-Amended) A method according to claim 27, wherein the tetrapeptide is -Leu-Ala-Leu-Ala- (SEQ ID NO: 1).

29. (Amended) A method according to claim 23, wherein said haloacetylhydrazide is obtained by a process comprising:

reacting a hydrazide having the formula:

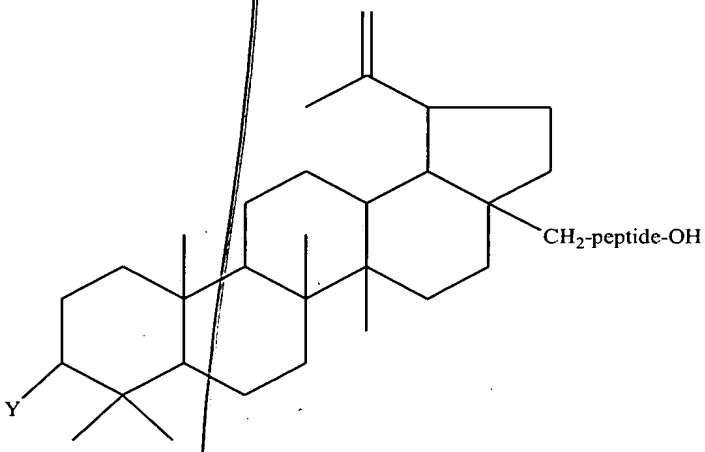


with a *para*-nitrophenyl α-haloacetate under conditions effective to produce the haloacetylhydrazide, and

isolating the haloacetylhydrazide.

30. (Amended) A method according to claim 29, wherein said hydrazide is obtained by a process comprising:

reacting a betulinol peptide having the formula:

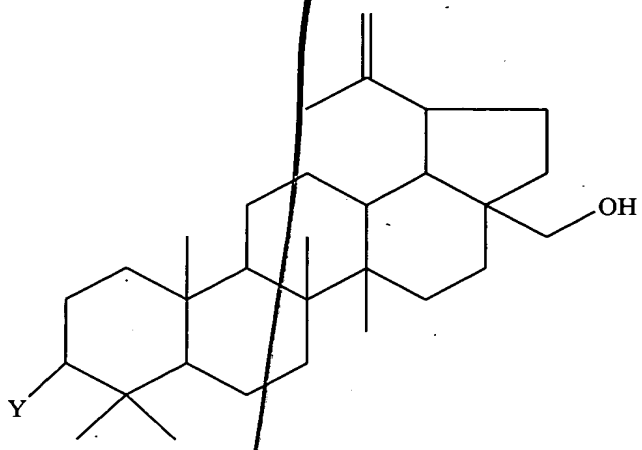


with hydrazine hydrate under conditions effective to produce the hydrazide, and

isolating the hydrazide.

31. (Amended) A method according to claim 30, wherein said betulinol peptide is obtained by a process comprising:

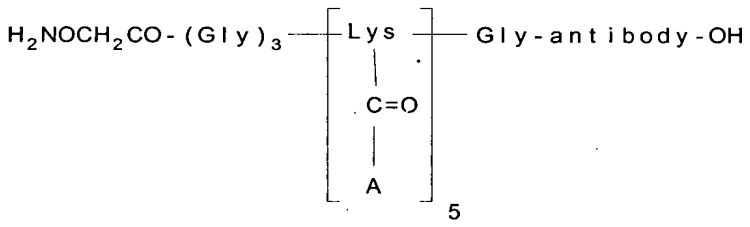
reacting a compound having the formula:



with a peptide having the formula H-peptide-OH under conditions effective to produce the betulinol peptide, and

isolating the betulinol peptide.

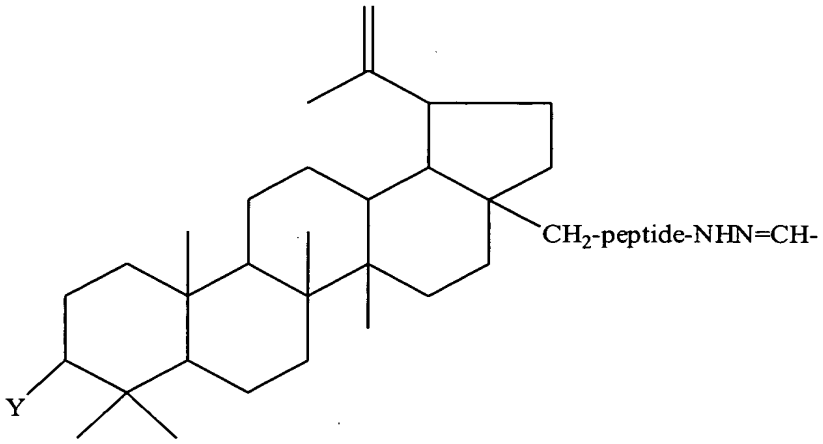
32. (Amended) A betulinol-antibody conjugate having the formula:



wherein

each "A" moiety is independently selected from the group consisting of a -CHO group and a moiety having the formula:

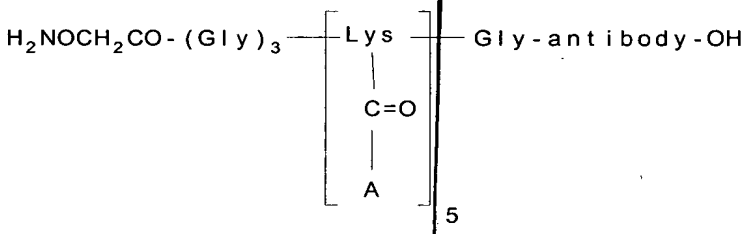
T, 0590



provided that at least one of A is not -CHO; and

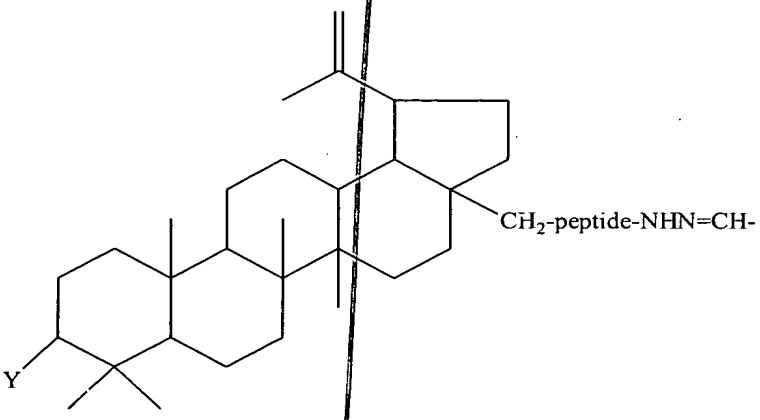
Y is a hydroxy group, an alkoxy group, or an alkanoyloxy group.

33. (Amended) A method of producing a betulinol-antibody conjugate having the formula:



wherein

each "A" moiety is independently selected from the group consisting of a -CHO group and a moiety having the formula:

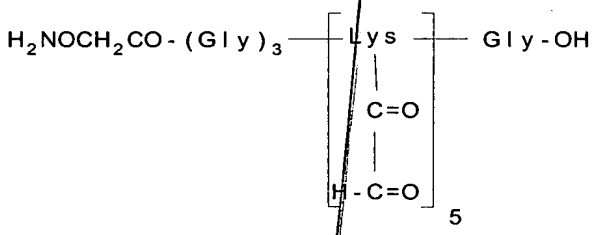


provided that at least one of A is not -CHO; and

Y is a hydroxy group, an alkoxy group, or an alkanoyloxy group,

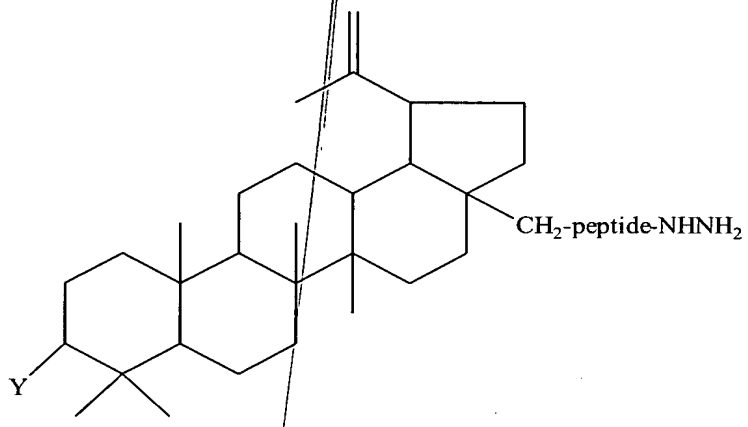
said method comprising:

reacting a carrier molecule having the formula:



with a hydrazide having the formula:

D9



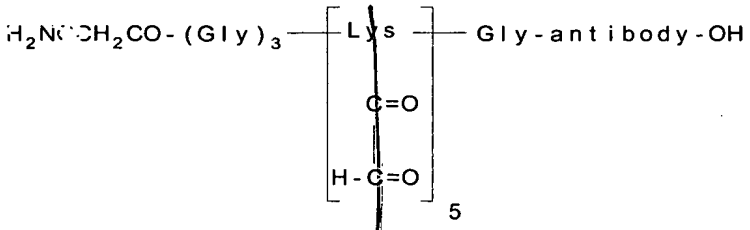
and an antibody having the formula H-antibody-OH under conditions effective to produce the betulinol-antibody conjugate, and

isolating the betulinol-antibody conjugate.

34. (Amended) A method according to claim 33, wherein said reacting the carrier molecule comprises:

reacting the carrier molecule with the antibody under conditions effective to produce an antibody-bound carrier molecule having the formula:

D

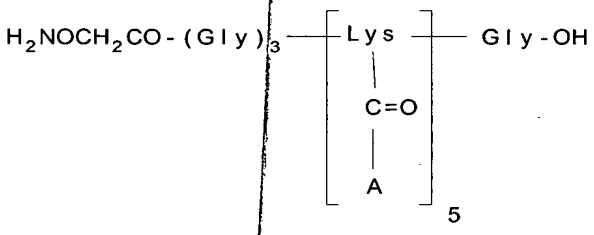


and

reacting the antibody-bound carrier molecule with the hydrazide under conditions effective to produce the betulinol-antibody conjugate.

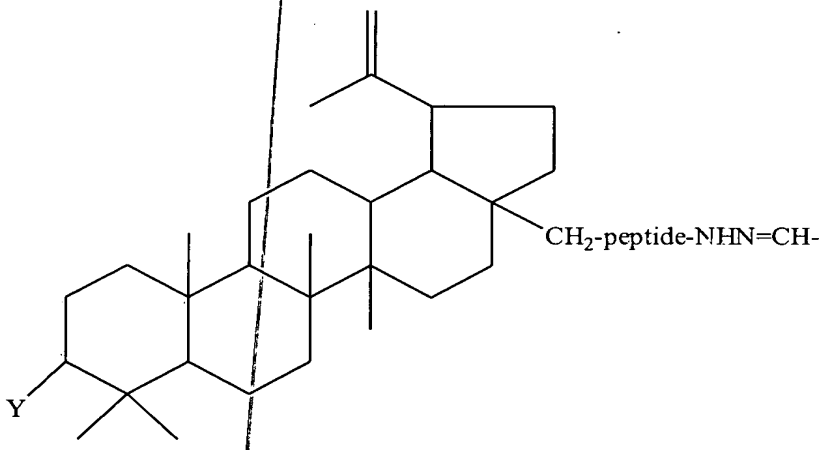
35. (Amended) A method according to claim 33, wherein said reacting the carrier molecule comprises:

reacting the carrier molecule with the hydrazide under conditions effective to produce a betulinol-bound carrier molecule having the formula:



wherein

at least one A is a moiety having the formula:



and

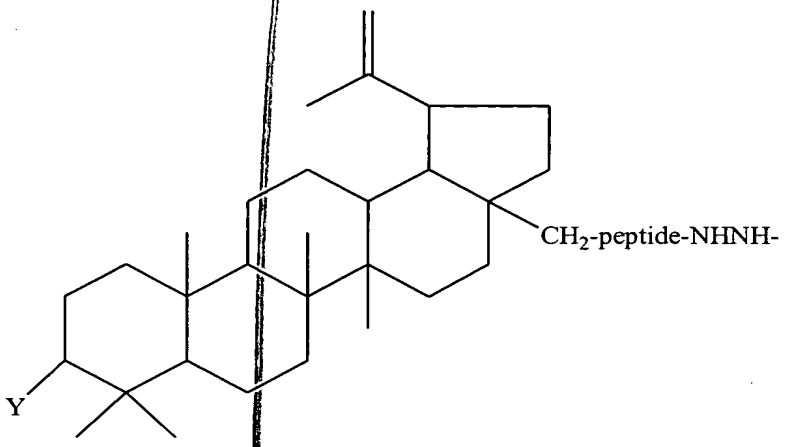
reacting the betulinol-bound carrier molecule with the antibody under conditions effective to produce the betulinol-antibody conjugate.

36. (Amended) A betulinol-antibody conjugate having the formula:

HO-antibody-spacer-$(A)_n$

wherein

A is a moiety having the formula:



Y is a hydroxy group, an alkoxy group, or an alkanoyloxy group; and

n is an integer from 1 to 100.

38. (Amended) A betulinol-antibody conjugate according to claim 36, wherein "spacer" is a diamine derivative of polyethylene glycol having 2-(pyridyldithio)-propionyl and N-hydroxysuccinimide ester groups bonded thereto.

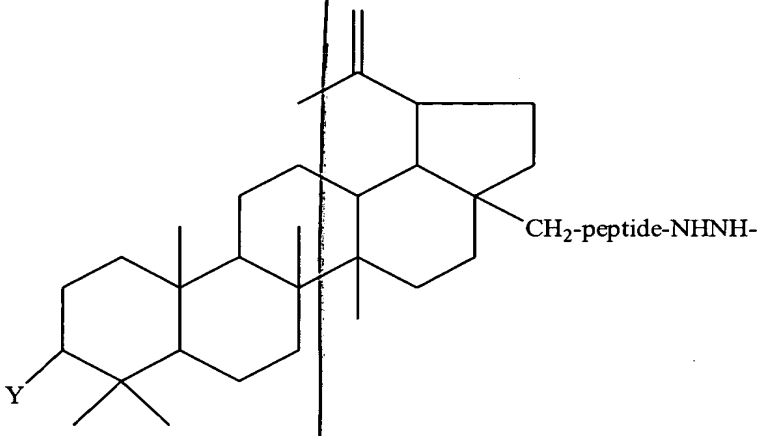
39. (Amended) A betulinol-antibody conjugate according to claim 36, wherein "spacer" is a branched form of polyethylene glycol propionic acid N-hydroxysuccinimide ester.

41. (Amended) A method of producing a betulinol-antibody conjugate having the formula:

HO-antibody-spacer-$(A)_n$

wherein

A is a moiety having the formula:



Y is a hydroxy group, an alkoxy group, or an alkanoyloxy group; and

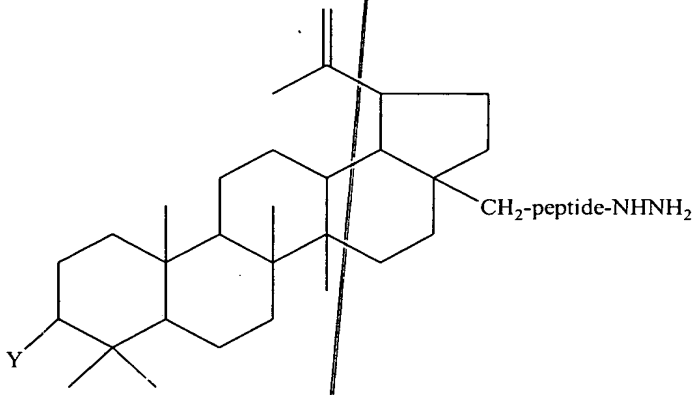
n is an integer from 1 to 100,

said method comprising:

providing a "spacer" having a first reactive terminus and one or more second reactive termini;

reacting an antibody with the first reactive terminus;

reacting a hydrazide having the formula:



with one or more of the one or more second reactive termini under conditions effective to produce the betulinol-antibody conjugate; and

isolating the betulinol-antibody conjugate.

45. (Amended) A method according to claim 41, wherein "spacer" is a diamine derivative of polyethylene glycol having 2-(pyridyldithio)-propionyl and N-hydroxysuccinimide ester groups bonded thereto.

46. (Amended) A method according to claim 41, wherein "spacer" is a branched form of polyethylene glycol propionic acid N-hydroxysuccinimide ester.